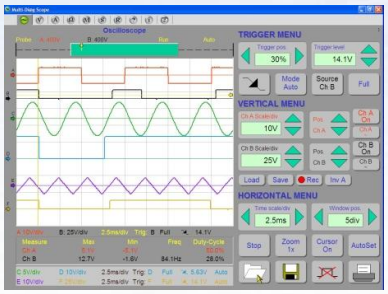
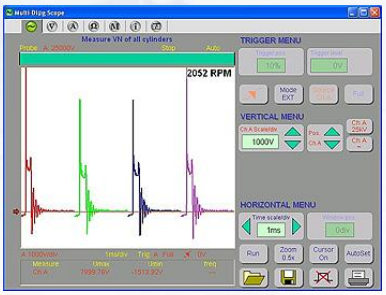
Multi-Diag®

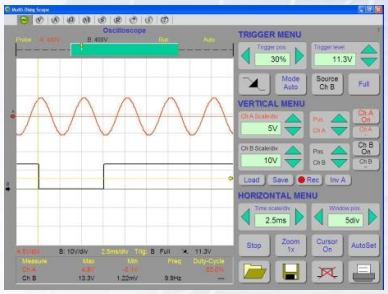
Multi-Diag Scope

since software version – 11.0 EN

Basic installation instructions







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ACTIA ATAL

Multi-Diag Scope - Basic installation instructions

1. INTRODUCTION

The ***Multi-Diag Scope*** measuring system is designed for the diagnostics and repairs of motor vehicles. It enables to measure and follow the courses of electrical voltage signals or of signals (e.g. current, pressure, ...) which can be conversed in the voltage signal by appropriate sensors. ***Multi-Diag Scope*** is designed as an open system which can be further extended by special measuring and testing modules.

Multi-Diag Scope is a part of the modular system for ***Multi-Diag Access*** (the multi-make diagnostic system for the diagnostics of electronic control units).

CAUTION ! The *Multi-Diag Scope* measuring system including all accessories can be only in used and connected to the electrical system of the diagnosed motor vehicle.
Do not use for the mains of 230V A/C.

2. SAFETY PRECAUTIONS

a) The device meets the requirements for the operation safety according to ČSN EN 61010-1 standard.
b) The device can be connected to the D/C voltage in the range of 8 to 32 V_{ss} only with the supplied feeder cable.
c) The device is designed for the measurement on cars and their accessories.
d) The covers from the device shall not be removed.
e) The keeper of the device shall secure the training of operators in the safety regulations for service workplace and in vehicle manufacturers' regulations valid for tests with the engine running.
f) Service workplace shall be equipped with the specified exhauster of fume exhausts from the measured vehicle.

3. AMBIENT CONDITIONS

- Operating temperature: 0 to +45 °C
- Operating relative humidity: 10 to 95 % incondensable
- Electromagnetic compatibility:
  - EN50081-1 : EN55022 1998
  - EN50082-1 : EN61000-4-2: 1995 - 4KVCD, 8kV AD
  - EN61000-4-3: 1997 - 3V/m
  - EN61000-4-4: 1995 - 0,5kV signal 5kHz
- The device complies with the EMC 73/23 directive for low voltages and CEM 89/336/EEC directive for electromagnetic compatibility and it was given the "CE" mark.

4. IMPORTANT WARNING

Multi-Diag Scope shall be operated in compliance with the User's Manual.

- Do not use the device in the rain and do not put it on the wet ground.
- Do not put the device on the hot ground.
- The device shall not be transported nor temporarily stored on the open platform unprotected from the rain and in the vehicles or areas where acids, chlorine, mercury vapours and similar substances can be found.
- For it's cleaning use suitable cleaners. Do not use solvents.

5. PC REQUIREMENTS

- Windows 2000 / XP / Vista / 7
- Processor: Intel Pentium 400 MHz compatible and faster
- VGA 800x640/16bits
- RAM 512 MB
- CD ROM drive
- Free RS 232 or USB port

6. SOFTWARE INSTALLATION

6.1 DESCRIPTION OF INSTALLATION CD AND ITS RUNNING

The attached CD contains all the necessary software for the use of ***Multi-Diag Scope*** system including the accompanying files such as user's manuals, prospectuses.
Insert the CD in your CD-ROM drive. **If the CD does not run automatically**, run the ***MultiScopeInstall*** program which you will find on the CD.

6.2 INSTALLATION OF MULTI-DIAG SCOPE PROGRAM

If you install the program on the computer with Windows 2000/XP/Vista/7 operation system, log in as a system administrator.

The installation is intuitive, guided by an installation wizard displayed on the PC screen.

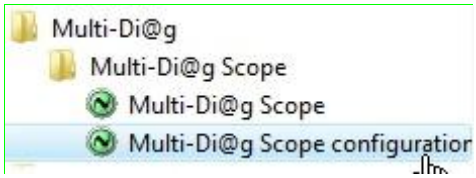
The installation may take several seconds. Click on “Finish” to complete the installation.
The pre-installation of drivers for the RS232-USB converter starts after its completion (see Kap. I - 7.2.1)

Note:
The default language of the Wizard is English but it can correspond to your language version of Windows

6.3 PROGRAM CONFIGURATION

Before the configuration program start you shall:
a) exit the Multi-Diag Scope program
b) install the USB to RS 232 converter
c) connect correctly the communication cable

The configuration utility is started by clicking on the **Multi-Diag Scope configuration** from **Start menu – Programs – Multi-Diag** and select desired port (see Fig. 1).



After appropriate activation starts dialog to configure Multi-Diag Scope (see Fig. 2).

Fig. 1 – Starting the configuration utility for the converter communication setup from Start menu – Programs – Multi-Diag (Windows Vista)

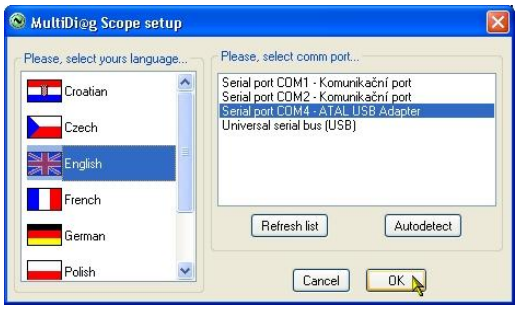


Fig. 2 – Multi-Diag Scope configuration dialogue box

6.4 PROGRAM AUTO UPDATE

When the program is started up and the initialization window is displayed (see Fig. 16), the system automatically verifies which program versions are in the computer and in the ***Multi-Diag Scope*** and **Motortester** modules.

If there is a newer version in the computer (after the UpDate installation from the CD), the internal software (the so-called firmware) will be overwritten either directly in **Multi-Diag Scope** or in the **Motortester** module. The indications are described in the following chapters Kap. I - 6.4.1 and Kap. I - 6.4.2. When the overwriting is finished, the ***Multi-Diag Scope*** program is automatically started up.

Note:
- The overwriting takes a few tens of seconds or some minutes.
- In the case of problems with overwriting (the so-called „”stalling“), we recommend switching off the power supply. After the reconnection and the program start-up everything will be reinitialized.
- In the case of computer “freezing“ we recommend restarting the computer.

6.4.1 AUTO UPDATE INDICATION ON THE SCREEN

When the **auto update** is in progress in **Multi-Diag Scope** or in the **Motortester** module, this state is indicated on the screen with the “**Loading firmware**“ flashing message - see the cursor in Fig. 3.

6.4.2 AUTO UPDATE INDICATION ON MULTI-DIAG SCOPE

When the **auto update** is in progress in **Multi-Diag Scope** or in the **Motortester** module, this state is indicated with a flashing LED indicator on **Multi-Diag Scope** (see the cursor in Fig. 4).
- Quick flashing = overwriting in the Motortester module
- Slow flashing = overwriting in Multi-Diag Scope

Fig. 3 – Initializing window with the message that firmware is being updated in Multi-Diag Scope or in Motortester module

Fig. 4 – Flashing LED indicator signalizes the SW overwriting in Multi-Diag Scope or in Motortester module

7. INSTALLATION OF A FOUND NEW DEVICE (HARDWARE – HW)

7.1 INSTALLATION OF ATAL DEVICES – GENERAL

After you have successfully carried out **any installation of a program from the Multi-Diag family** and have connected **any USB device from the ATAL company** to the USB ports of your computer, the information about the found new hardware (HW) will soon appear in the form of the so-called „Info tips“ (see Fig. 5).

Found New Hardware
ATAL USB Adapter
Found New Hardware
ATAL USB to RS232 Converter
Found New Hardware
Your new hardware is installed and ready to use.

Fig. 5 – Examples of info tips informing about the detection of a new device (Windows XP)

7.2 INSTALLATION OF THE USB-RS 232 CONVERTER

Fig. 6 – RS232-USB converter

The USB-RS 232 converter (see Fig. 6) ensures communication between the Multi-Diag Scope and a PC (or Laptop)

7.2.1 INSTALLATION OF DRIVERS FOR THE USB-RS 232 CONVERTER

P After you have clicked on the “Finish” button to complete the Multi-Diag Scope installation, it is also necessary to pre-install the drivers for the RS232-USB converters.

After the start of the installation wizard (see Fig. 7) , as the first step, the search for older (invalid) drivers takes place (see Fig. 8).

The following series of figures was taken from the installation wizard for the Windows XP operating system. The wizard for Windows Vista is similar but with a different picture:

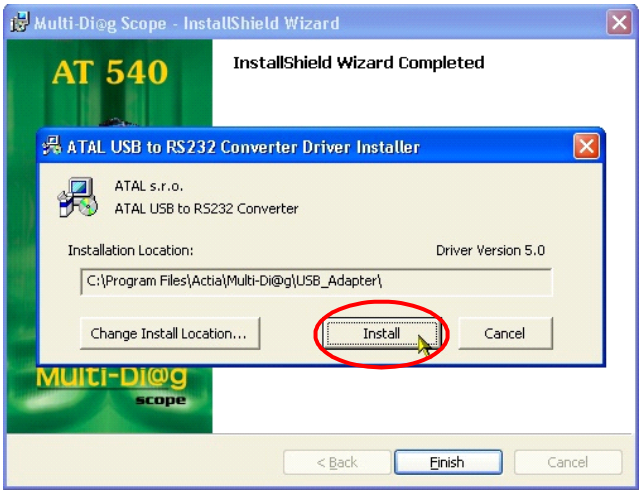


Fig. 7 – Start of the pre-installation of RS 232-USB converter drivers

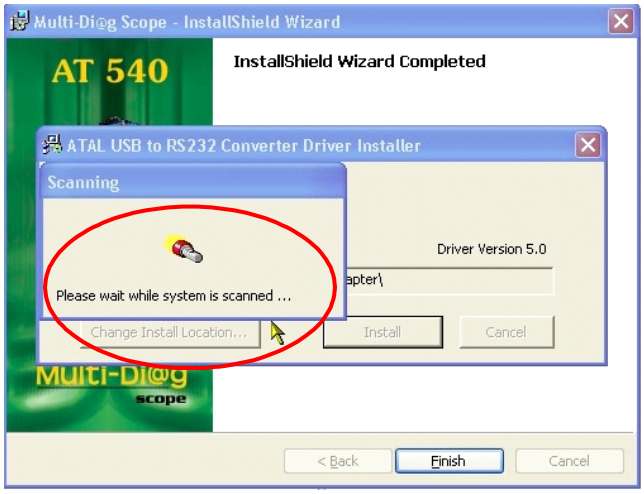


Fig. 8 – Search for older (invalid) drivers

a) **If old drivers are detected**, the information about their presence will be displayed (see Fig. 9) together with a suggestion for their removal. It is recommended that you remove the old drivers.

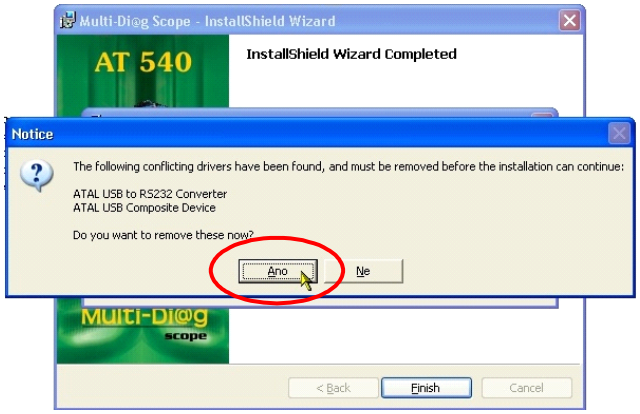


Fig. 9 – The result of a search for old drivers – it is recommended to uninstall them (Ano/Yes)

Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

Fig. 10 – A warning of the Windows XP operating system is displayed (for further details see the Note below)

The actual driver pre-installation ensues which will be later used for the detection of new hardware after the connection of the RS232-USB converter to the USB port. This process ensures that the installation CD will not be necessary again.

Warning:
If the old drivers are not removed, the new drivers will not be installed and the correct operation of the RS232-USB converters cannot be guaranteed.
Note to Fig. 10:
A warning of the OS Windows XP informs that the installed driver was not certified by Microsoft. This **notification can be displayed** in the process of installation several times and it is possible to **ignore it without any concerns**!

When the installation of the new drivers is completed, a notification is displayed informing about the need for restarting the system (see Fig. 12). It is recommended to perform this restart.

b) **If up-to-date drivers are detected**, the information about their presence will be displayed (see Fig. 12) and the Multi-Diag Scope installation will be complete.

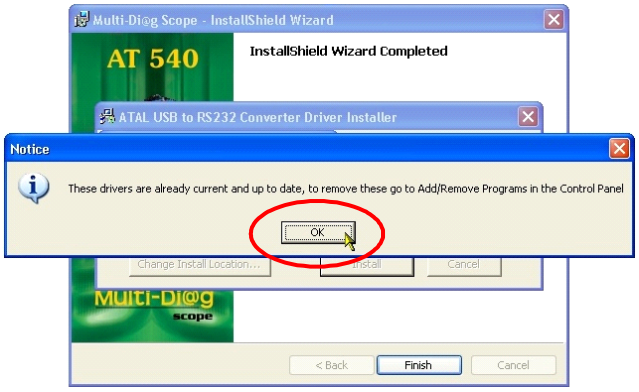


Fig. 11 – The result of a search for old drivers (in this case the drivers are up-to-date)

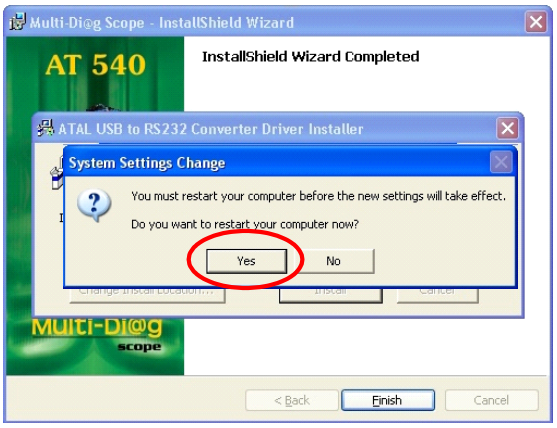
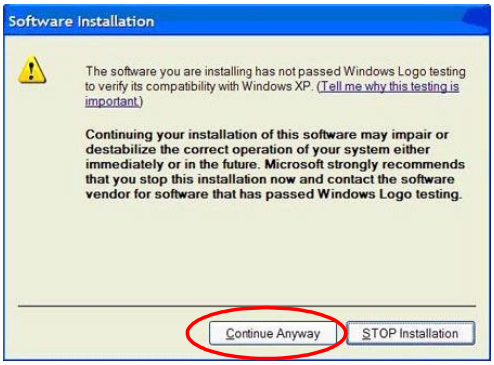


Fig. 12 – A system requirement for restarting the system – it is recommended to perform the restart (Ano/Yes)

7.2.2 ADAPTER USB-RS 232 FINAL INSTALLATION

1. Initiation of the converter installation is conditioned by previous successful Multi-Diag Scope installation.
2. Connect the converter to the PC (insert it into an arbitrary free USB connector)
3. The device has been detected, see Fig. 5.
4. The hardware installation is straightforward and is guided by the installation wizard on the PC screen.

Note:
The language of the Wizard corresponds to your language version of Windows.


Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

A warning of the OS Windows XP informs that the installed driver was not certified by Microsoft.

This **notification can be displayed** in the process of installation several times and it is possible to **ignore it without any concerns**!

Fig. 13 – A warning of the Windows XP operating system is displayed

8. PROGRAM MULTI-DIAG SCOPE START UP

To start the program up, click on the ***Multi-Diag Scope*** icon on the monitor desktop (see Fig. 15), or on the ***Multi-Diag Scope*** option from the ***„Start\Programs Multi-Diag "*** program group (see Fig. 14).

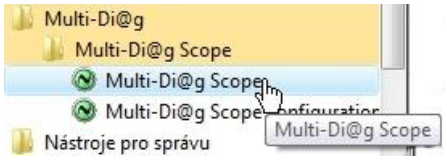


Fig. 14 – Multi-Diag Scope *program group (Windows Vista - Start \ Programs \ ...)*

Fig. 15 – Multi-Diag Scope *program icon on the monitor desktop*

Fig. 16 – Initialization window when starting up the Multi-Diag Scope program (from 7.1 version)

After its activation, the initialization window is displayed and then you can see the ***Multi-Diag Scope*** screen

8.1 ERROR MESSAGE WHEN MULTI-DIAG SCOPE IS DISCONNECTED

Multi-Di@g Scope
Hardware is not connected or communication port is not free.
If you have not purchased Multi-Di@g Scope,
please contact your Multi-Di@g representative.
OK

Fig. 17 – Dialogue box with the error message about the disconnected Multi-Diag Scope

If an error message (see Fig. 17) is displayed after the program is started up, the cause shall be find out (power supply, communication port, license and so on) and then you shall try to restart the program up

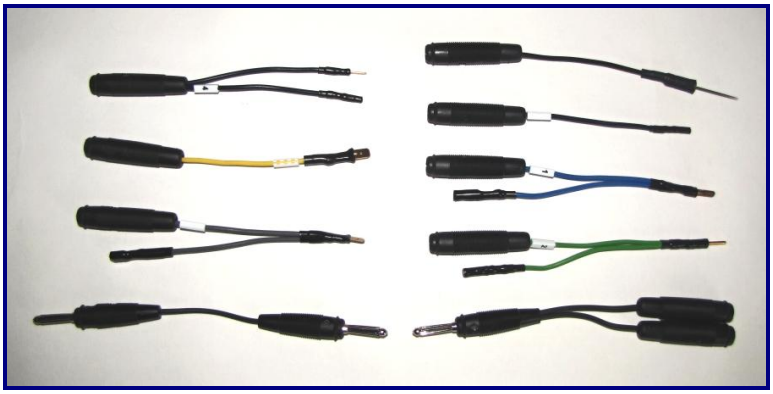
9. CONTROL OF INDIVIDUAL FUNCTIONS AND SETTING OF OSCILLOSCOPE PARAMETERS

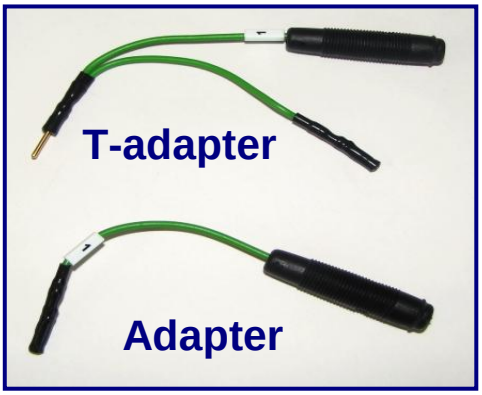
In all its functional modes, ***Multi-Diag Scope*** is controlled by means of the mouse cursor and mouse left-button. In the case of the touch screen it is controlled with the “control pencil” by touching the respective symbol or by it’s moving on the screen. Hereinafter only the control by means of the mouse is mentioned, however in the case of the touch screen the mouse is replaced with the “control pencil” and therefore by mentioning the mouse we imply the “control pencil”.

10. UNIVERSAL INTERCONNECTION KIT

To find a fault in an electronic system, we often need to perform some measurements on related circuit, which may be difficult to access on the new vehicle models. Piercing of wire insulation is not allowed, so it is necessary to use other way of connection.

The **Universal interconnection kit**, which allows to establish such connections, is a suitable accessory for Multi-Diag Scope.





The set includes several adapters allowing connecting an Multi-Diag Scope to the measured element or cabling connector. The measured element can be disconnected from or connected to the circuit, and the measurement may be performed during its functioning, i.e. for example during a driving test.